



National Textile University

Department of Computer Science

Subject:

Operating System

Submitted to:

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Reg. number:

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Semester:

5th- A

LAB 01

WSL2 and UBUNTU setup

Objective:

The purpose of his lab is to explore the ubuntu environment running inside windows through WSL2. We also practicing navigating the Linux file system, accessing windows files through WSL and sharing files between Windows and Ubuntu.

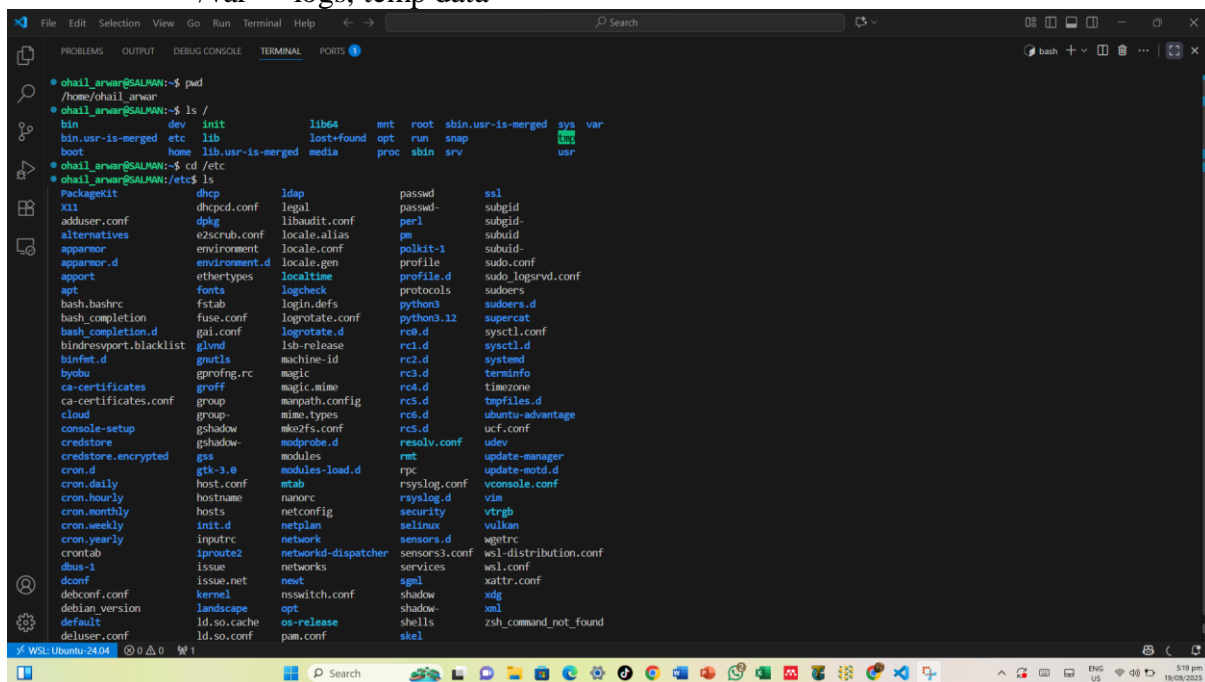
TASK_01: Exploring Linux Filesystem

- First of all, I opened VS Code and connected it to UBUNTU by clicking on the icon present

in left-bottom of the page.

- I also learn following important directories:

- /bin → essential binaries
- /etc → configuration files
- /home → user home folders
- /var → logs, temp data

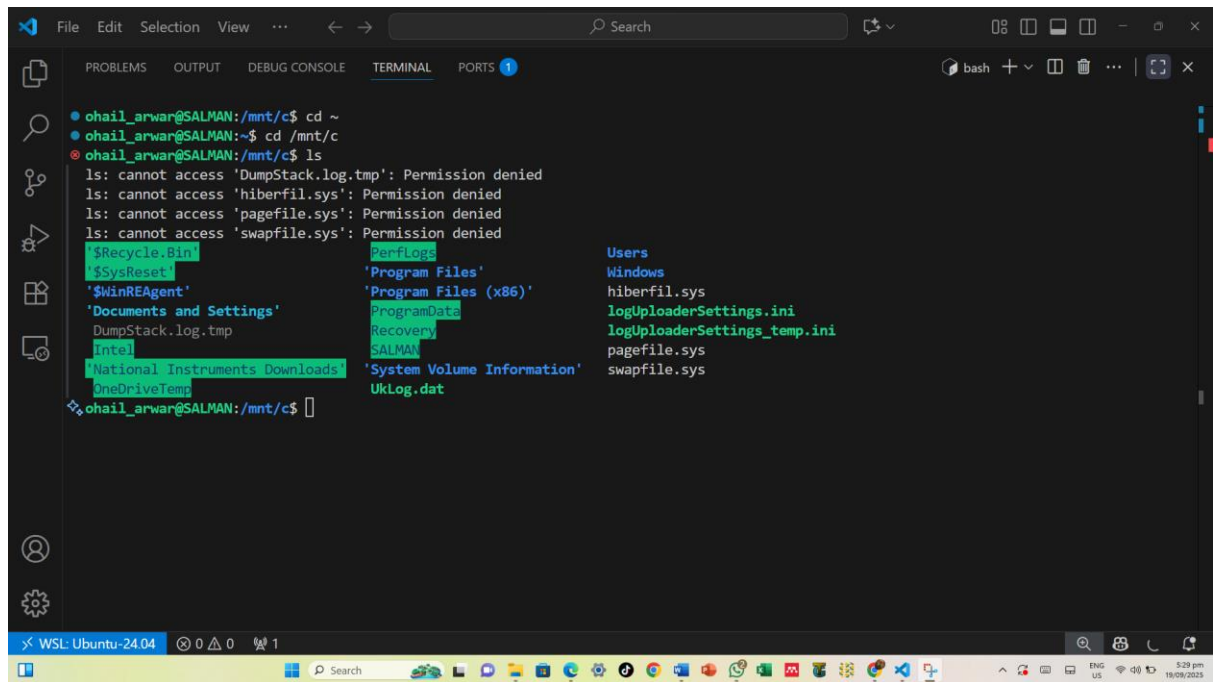


```
chail_arwar@SALMAN:~$ pwd
/home/chail_arwar
chail_arwar@SALMAN:~$ ls /
bin      dev      init     lib64    mnt      root    sbin     usr-is-merged  sys  var
bin.usr-is-merged  etc      lib      lost+found  opt      run      snap
boot     home    lib.usr-is-merged  media    proc     sbin     srv
chail_arwar@SALMAN:~$ cd /etc
chail_arwar@SALMAN:/etc$ ls
PackageKit  dhcpd.conf  idmapd      passwd      sel
x11         dhcpd.conf  legal       passwd-     subgid
adduser.conf  dpkg       libaudit.conf  perl       subgid
alternatives  e2scrub.conf  locale.alias  pm         subuid
apparmor      environment  locale.conf   polkit-1    subuid
apparmor.d    environment.d  locale.gen    profile     sudo.conf
appost        ethtypes     localtime     profile.d   sudo_logsrvd.conf
apt           fonts        logcheck     protocols   sudoers
bash.bashrc   fstab        login.defs    python3     subvers.d
bash_completion  fuse.conf    logrotate.conf  python3.12  supercat
bindresvport.blacklist  gai.conf     logrotate.d    rc0.d       sysctl.conf
binfmt.d      gnutls       lsb-release   rc1.d       sysctl.d
byobu         gprofng.rc   machine-id    rc2.d       system
ca-certificates  groff        magic         rc3.d       terminfo
ca-certificates.conf  group        magic.mime    rc4.d       timezone
cloud          gshadow      manpath.config  rc5.d       tmpfiles.d
console-setup  gshadow      mke2fs.conf   rc6.d       ubuntu-advantage
credstore      gshadow      modprobe.d    rc5.d       ucf.conf
credstore.encrypted  gss          modules       resolv.conf  udev
cron.d         gtk-3.0      modules-load.d  rpm         update-manager
cron.daily     hostname     mtab          rsyslog.conf  update-motd.d
cron.hourly    hostname     nanorc        rsyslog.d    vconsole.conf
cron.monthly   hosts        netconf       security     vtrgb
cron.weekly    init.d       netplan       selinux      vulkan
cron.yearly    inputrc     network       sensors.d    wgetrc
crontab        iproute2     networkd-dispatcher  sensors3.conf  wsl-distribution.conf
dbus-1         issue        networks      services     wsl.conf
dconf          issue.net    newt          sgml        xattr.conf
debconf.conf   kernel       nsoswitch.conf  shadow     xdg
debian.version  landscape    opt           shadow-     xsl
default        ld.so.cache  os-release    shells      zsh_command_not_found
deluser.conf   ld.so.conf   pam.conf      skel
```

TASK_02: Access Windows Filesystem under /mnt/

In UBUNTU(WSL), we can also access windows drives by using /mnt/

- C: drive → /mnt/c
- D: drive → /mnt/d



```
ohail_arwar@SALMAN:/mnt/c$ cd ~
ohail_arwar@SALMAN:~$ cd /mnt/c
ohail_arwar@SALMAN:/mnt/c$ ls
ls: cannot access 'DumpStack.log.tmp': Permission denied
ls: cannot access 'hiberfil.sys': Permission denied
ls: cannot access 'pagefile.sys': Permission denied
ls: cannot access 'swapfile.sys': Permission denied
$Recycle.Bin
$SysReset
$WinREAgent
Documents and Settings
DumpStack.log.tmp
Intel
National Instruments Downloads
OneDriveTemp
PerfLogs
Program Files
Program Files (x86)
ProgramData
Recovery
SALMAN
System Volume Information
UkLog.dat
Users
Windows
hiberfil.sys
logUploaderSettings.ini
logUploaderSettings_temp.ini
pagefile.sys
swapfile.sys
ohail_arwar@SALMAN:/mnt/c$
```

TASK_03: File sharing between Windows and UBUNTU

- We can create a file in windows and open it in UBUNTU.
- We can also create a file in UBUNTU and open it in windows by using following commands:
 - `cat windows_file.txt` → read file made in Windows
 - `echo "Hello from Ubuntu" > ubuntu_file.txt` → make file in Ubuntu
 - `python3 test.py` → run python file from Windows.

TASK_04: gcc installation and Version Check

We also install and check the version of gcc by applying following commands in terminal:

- `sudo apt update && sudo apt upgrade -y` → updates and upgrades your system
- `sudo apt install build-essential -y` → installs developer tools needed for programming in C/C++ and building software.
- `gcc --version` → checks the version of gcc.

```
File Edit Selection View Go Run Terminal Help Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
chail_arwar@SALMAN:~$ sudo apt update && sudo apt upgrade -y
[sudo] password for chail_arwar:
Hit:1 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following package was automatically installed and is no longer required:
  libllvm9
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
chail_arwar@SALMAN:~$ sudo apt install build-essential -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
E: Unable to locate package build-essential -y
chail_arwar@SALMAN:~$ sudo apt install build-essential -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
build-essential is already the newest version (12.10ubuntu1).
The following package was automatically installed and is no longer required:
  libllvm9
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
chail_arwar@SALMAN:~$ gcc --version
gcc (Ubuntu 13.3.0-6ubuntu2~24.04) 13.3.0
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This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

chail_arwar@SALMAN:~$
```